#### IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s):

James Andrew Davis, et al.

Serial No.:

09/915,194

Filed:

July 25, 2001

For: "ERROR CORRECTION CODING AND DECODING IN A SOLID-STATE STORAGE

DEVICE"

RE: Request for Substitute

Group Art Unit:

2811

Examiner:

unknown

Our Ref.: B-4257 618971-3

Date of this paper:

April 3, 2002

VIA FACSIMILE 1-703-872-9302(TC3700) 42 PAGES

Box Duplicate TC3700 U.S. Patent and Trademark Office P.O. Box 2327 Arlington, VA 22202-2327

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Sir:

Technology Center 2100

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We acknowledge receipt of the Request for Substitute Papers date \$\frac{\infty}{3/22/2002}\$ (copy enclosed). The Request makes reference to papers filed on \$\frac{2}{25/2002}\$. According to our records, no papers were filed on that date. In a spirit of cooperation, we enclose copies of papers filed on \$11/8/2001\$. Please find enclosed a copy of the above-identified application papers, as follows:

- 1) the Request for Substitute Papers dated 3/22/2002
- 2) postcard for Completion of Filing Requirements
- 3) First Class Mail envelope for Completion of Filing Requirements
- 4) Transmittal letter for Completion of Filing Requirements with Certification under 37 CFR 1.10 dated 11/8/01 (2 pages)
- 5) Check no. 14146 in the amount of \$870.00
- 6) Notice to File Missing Parts of Non-Provisional Application
- 7) Declaration/Power signed by inventor James Andrew Davis (2 pages); Declaration/Power signed by inventor Jonathan Jedwab (2 pages); Declaration/Power signed by inventors David H. McIntyre, Kenneth K. Smith, and Stewart R. Wyatt (2 pages); Declaration/Power signed by inventor Kenneth Graham Paterson (2 pages); Declaration/Power signed by inventor Frederick A. Perner (2 pages); Declaration/Power signed by inventor Gadiel Seroussi (2 pages)

RE: Request for Substitute Papers USSN 09/915,194 April 3, 2002 Page 2

- 8) Postcard for Assignment Recordation of one assignment
- First Class Mail envelope for Assignment Recordation
- 10) Check no. 14147 in the amount of \$40.00
- 11) Recordation Form Cover Sheet with certificate of mailing (Conveying Parties: Hewlett-Packard Limited, Jonathan Jedwab, and Kenneth Graham Paterson; Receiving Party: Hewlett-Packard Company) (2 pages)
- 12) Assignment document from Hewlett-Packard Limited, Jonathan Jedwab, and Kenneth Graham Paterson to Hewlett-Packard Company (1 page)
- 13) Postcard for Assignment Recordation
- 14) First Class Mail envelope for Assignment Recordation
- 15) Check no. 14148 in the amount of \$40.00
- 16) Recordation Form Cover Sheet with certificate of mailing (Conveying Parties: James Andrew Davis, David H. McIntyre, Kenneth K. Smith, Stewart R. Wyatt, Frederick A. Perner, and Gadiel Seroussi; Receiving Party: Hewlett-Packard Company) (2 pages)
- 17) Assignment documents (12 pages)

Respectfully submitted,

Richard P. Berg

Attorney for Applicant

Reg. No. 28,145 LADAS & PARRY

5670 Wilshire Boulevard

Suite 2100

Los Angeles, CA 90036

Telephone: (323) 934-2300

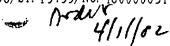
Telefax:

(323) 934-0202

I hereby certify that this correspondence is being transmitted by facsimile to the United States Patent and Trademark Office (USPTO) on the date shown below. Specifically, this correspondence is being telefaxed to the USPTO at (703) 872-9302(TC3700) on April 3, 2002.

Cheryl Liang

CASE





# United States Patent and Trademark Office

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Washington, D.O. 20221

				Www.mapto.gov	
ı	Application Number	Filing Date			
Į	09/915,194	- Batt	First Named Applicant	Atty. Dock	et No
Į	03/313,194	07/25/2001	Davis, James		
	•		January States	B-4257 618	971-3
1	ADA0 0				

LADAS & PARRY
Suite 2100
5670 Wilshire Boulevard
Los Angeles CA 90036-5679

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**Technology Center 2100** 

MAR 2.8 2002 BEQUIVED

Title: Error correction coding and decoding in a solid-state storage device

Date Mailed:03/22/2002

# Request for Substitute Papers

The papers filed on <u>02/25/02</u> are no longer in condition to become part of the permanent records of the United States Patent and Trademark Office (USPTO) for this application (37 CFR 1.52(a)) due to the United States Postal Service sanitization process.

The USPTO requests that applicant provide a copy of the above-identified papers (except for any U.S. or foreign patent documents submitted with the above-identified papers) with a statement that such copy is a complete and accurate copy of the above-identified papers (signing and returning a copy of this notice will provide such a statement). The reply to this letter should be submitted to the USPTO by facsimile at the number indicated 703-746-4060(OIPE).

Alternatively, the reply to this letter may be hand-carried to the Customer Service Window located in Room 1B03 of Crystal Plaza Building 2, Arlington, Virginia, 22202.

The USPTO strongly prefers that the reply to this letter be submitted by facsimile. However, if applicant cannot submit the reply to this letter by facsimile (or hand-delivery), the reply may be mailed to: Box Duplicate OIPE, U.S. Patent and Trademark Office, P.O. Box 2327, Arlington, VA 22202-2327.

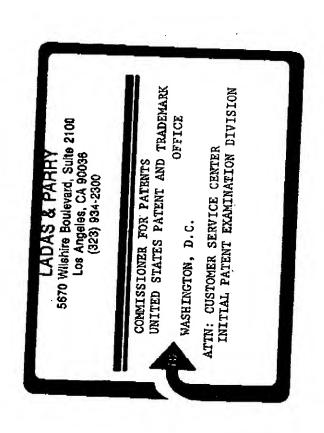
This letter is not a notice under 37 CFR 1.251. However, failure to timely replay to this notice within two (2) weeks of the date of receipt of this letter may result in the USPTO issuing a notice under 37 CFR 1.251. A copy of this notice should be included with the reply.

The enclosed papers are a complete and accurate copy of the above-identified pape	re
Name: Registration No.:	10
Signature: Date: 4/3/02	

To:	USP)D (kl)	Our reference: B-4257 618971-3
ANI THE PATEN MAIL ROON RECEIPT O Transmittal in response of Missing Part fee and surc (2 pages); of original Deceand Stewart Kenneth Gra Frederick A	MMISSIONER OF PATENTS D TRADEMARKS NT AND TRADEMARK OFFICE M STAMP HEREON ACKNOWLED F: Completion of Filing Requirements Letter with Certificate of Mailing (2 p to Notice to File Missing Parts of App ts (1 page); Check No. 14146 in the a harge: original Declaration/Power sign riginal Declaration/Power signed by ir laration/Power signed by inventors Da R. Wyatt (2 pages); original Declaration ham Paterson (2 pages); original Declaration Perner (2 pages); original Declaration	Date mailed: November 8, 2001  JES  JES  JES  JES  JES  JES  JES  JE
IN CONNE Jam FOR: "ERI DECODING	pages and this postcard. CTION WITH: les Andrew DAVIS, et al. ROR CORRECTION CODING ANI G IN A SOLID-STATE STORAGE I	STAMP DEVICE"
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE Applicant(s): Group Art Unit: 2811 James Andrew DAVIS, et al. Serial No.: 09/915,194 Filed: July 25, 2001 Examiner: unknown Our Ref.: B-4257 618971-3 For: "ERROR CORRECTION CODING AND DECODING IN A SOLID-STATE STORAGE Date of this paper: DEVICE " November 8, 2001 Commissioner for Patents United States Patent and Trademark Office Washington, D.C. 20231 Customer Service Center Initial Patent Examination Division Sir: COMPLETION OF FILING REQUIREMENTS Responsive to office letter dated 09/10/2001 (copy attached). DECLARATION OR OATH Please find enclosed the Declaration/Power signed by inventor [X]James Andrew Davis. Please find enclosed the Declaration/Power signed by inventor [X]Jonathan Jedwab. Please find enclosed the Declaration/Power signed by inventors [X]David H. McIntyre, Kenneth K. Smith, and Stewart R. Wyatt. [X] Please find enclosed the Declaration/Power signed by inventor Kenneth Graham Paterson. Please find enclosed the Declaration/Power signed by inventor Frederick A. Perner. [X]Please find enclosed the Declaration/Power signed by inventor [X]Gadiel Seroussi. AMENDMENT OF CLAIMS Please cancel claims inclusive Please find enclosed an amendment deleting multiple dependencies NOTE: The filing fees, fees for and surcharge fees listed below are reduced by 50% where proof of a small entity status is established on or before the date the fee is paid. If the full fee is paid but a verified statement is filed within two months of the date of payment of the first fee then the excess fee paid will be refunded on request. Notice of January 20, 1983. 1027 TMOG 114. [X] Filing fee (37 CFR 1.16(a) - 740.00) \$740.00

(small entity -370.00[ ] Fees for claims Independent claim in excess of 3 (37 CFR 1.16(b) - 84.00) (small entity -42.00)Claims in excess of 20 [ ] (37 CFR 1.16(c) - 18.00) (small entity - 9.00)

CERTIFICATE OF MAILING (37 CFR 1.8a) I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to the:

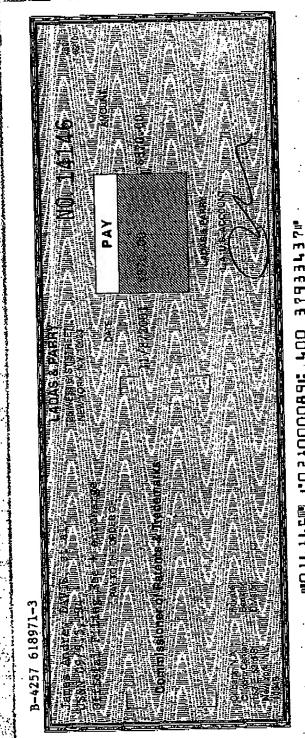
Commissioner for Patents United States Patent and Trademark Office Washington, D.C. 20231

Customer Service Center

Initial Patent Examination Division Date: November 8. 2001

<u>Karyn Lao</u> (Typed or printed name of person mailing paper)

	[] Multiple dependent claim(s) (37 CFR 1.16(d) - 260.00) (small entity - 130.00)
(x)	Surcharge fees
	[X] Late payment of filing fee (37 CFR 1.16(e) - 130.00) (small entity - 65.00)
	AND
	[X] Late filing of declaration or oath (37 CFR 1.16(e) - 130.00) (small entity - 65.00)
[ ]	Petition fee for filing by person not the inventor (37 CFR 1.17(h) \$120.00)
[ ]	Recording assignment
[ ]	(37 CFR 1.21(h)(i) 40.00) Attached is an assignment to
	Total fees:\$870.00
	SMALL ENTITY STATUS
[ ]	A verified statement that this filing is by a small entity is
	[ ] Attached [ ] Already filed on
	PAYMENT OF FEES
[X]	Enclosed is a check in the amount of \$870.00
[ ]	Charge Account No. <u>12-0415</u> in the amount of  A duplicate of this request is attached.
NOTE:	Fees should be itemized in such a manner that it is clear for which purpose the fees are paid. $37\ \text{CFR}\ 1.22(b)$ .
	AUTHORIZATION TO CHARGE ADDITIONAL FEES
[X]	The Commissioner is hereby authorized to charge the following additional fees which may be required or credit any overpayment to Account No. $12-0415$ .
	[X] 37 CFR 1.16 (filing fees and presentation of extra claims)
	[X] 37 CFR 1.17 (application processing fees)
	[ ] 37 CFR 1.18 (issue fee at or before mailing of Notice of Allowance, pursuant to 37 CFR 1.311(b).
NOTE:	37 CFR 1.28(b) requires "Notification of any change in status resulting in loss of entitlement to small entity status must be filed in the application prior to paying issue fee."
յե մել	Richard P. Berg Attorney for the Applicant
	Registration No.: 28,145  C/O LADAS & PARRY  5670 Wilshire Boulevard, Suite 2100 Los Angeles, California 90036-5679
	Telephone No.: (323) 934-2300 Facsimile No.: (323) 934-0202



Received from < 13239340202 > at 4/3/02 6:56:45 PM [Eastern Standard Time]

3



#### United States Patent and Trademark Office

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UNITED STATES PATENT AND TRADEMARK OFFICE
WASHINGTON, D.C. 20231
WWW.MSON.OGO.

APPI.ICATION NUMBER

FILING/KECKIPT DATE

FIRST NAMED APPLICANT

ATTORNEY DOCKET NUMBER

09/915,194

07/25/2001

James Andrew Davis

B-4257 618971-3

**CONFIRMATION NO. 5298** 

FORMALITIES LETTER

CC000000006534578\*

LADAS & PARRY Suite 2100 5670 Wilshire Boulevard Los Angeles, CA 90036-5679

Date Mailed: 09/10/2001

## NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

Filing Date Granted

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given TWO MONTHS from the date of this Notice within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The statutory basic filing fee is missing.
   Applicant must submit \$ 710 to complete the basic filing fee and/or file a small entity statement claiming such status (37 CFR 1.27).
- · The oath or declaration is unsigned.
- To avoid abandonment, a late filing fee or oath or declaration surcharge as set forth in 37 CFR 1.16(e) of \$130 for a non-small entity, must be submitted with the missing items identified in this letter.
- The balance due by applicant is \$ 840.

A copy of this notice MUST be returned with the reply.

Customer Service Center

Initial Patent Examination Division (703) 308-1202

PART 2 - COPY TO BE RETURNED WITH RESPONSE

# DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

ATTORNEY DOCKET NO. 10012432 -1

As a below named inv						
		ress and citizenship are				
I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:						
Error Correction Codin	g And	Decoding in A Solid-Sta	te Storage Device			
the specification of w	nich is	attached hereto unless	the following box is	hecked:		
(X) was filed on	너 25,	2001 as US App	lication No. or PCT I	nternational Applica	ation	
Number <u>09/91</u>			led on			
including the claims, a	is ame	wiewed and understood nded by any amendmer i is material to patentabi	olis) referred to show	e lacknowiladaa	pecification, the duty to	
Foreign Application(s) and/o	r Claim c	of Foreign Priority				
unventor(s) cettilicate listed	Delow as	its under Title 35. United Sta nd have also identified below a ation on which priority is claim	any toreion application for	any foreign application( patent or inventor(s) co	s) for patent or stificate having	
COUNTRY		APPLICATION NUMBER	DATE FILED	FRICRITY CLAIMED UNDE	R 35 U.S.C. 119	
				YES: A	ю	
				YE6: N	ID:	
Provisional Application I hereby claim the benefit unbelow:	nder Titte	35, United States Code Sec	tion 119(e) of any United	States provisional appli	cation(s) listed	
		APPLICATION NUMBER	FILING DATE			
U. S. Priority Claim				7		
manner provided by the first information as defined in Title	of each paragra 37. Co	a 35, United States Code, Se of the claims of this applical ph of Title 35, United States de of Federal Regulations, Sec ternational filing date of this a	ion is not disclosed in the Code Section 112, I acknowledge 156(a) which occurs	e prior United States app	plication in the	
APPLICATION NUMBER		FILING DATE	STATUS (p	atented/pending/abandoned)		
			<u> </u>			
POWER OF ATTORNEY: As a named inventor, I here business in the Patent and Tr	by appo ademark	int the following attorney(s) Office connected therewith:	and/or agent(s) to prose	cute this application an	d transact all	
Customer I	Number	022879	Place Customer Number Bar Code Label hare	]		
Send Correspondence to: HEWLETT-PACKARD COR	1DA NY	· · · · · · · · · · · · · · · · · · ·	Direct Telephon	e Carls To:		
Intellectual Property Admi		n	Richard P Berg,	Reg no 28,145	ŀ	
P.O. Box 272400 Fort Collins, Colorado 80:	527-240	0	(323) 934 230(		į	
L						
with the knowledge the imprisonment, or both.	id bei lat wil under l	nents made herein of m lef are believed to be tr Iful false statements a Section 1001 of Title 1 te the validity of the app	ue; and further that ind the like so mad 8 of the United Stat	these statements the are punishable as Code and that a	were made	
Full Name of Inventor: Jame	s And	new Davis	Citizenship: US			
		nmill Court Richmond, V				
Pos Office Address: Sam	e as R	esidence				
LOWICE CANA!	W.	XXXXX	27/9/01			

Received from < 13239340202 > at 4/3/02 6:56:45 PM [Eastern Standard Time]ator(s) Signature(s))

Page 1 of 2

# DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION (continued)

ATTORNEY DOCKET NO. 10012432 -1

Full Name of # 2 joint inve	mor: Jonathan Jedwab		Citizenship: GB				
Residence:	Flat 17 Parklands 27 Tyndalls P	ark Road	Bristol, England B58 IPQ				
Post Office Address:	Same as residence						
Inventor a Signature		Date	M				
Full Name of # 3 joint inve	ntor: David H. McIntyre		Citizenship: US				
Residence: 13076 W Woodspring Street Bolse, ID 83713							
Post Office Address:	Same as Residence						
Inventor a Signature							
		Date					
Pull Manne of the Table Serve							
	ntor: Kenneth Graham Paterson	DOC ET	Citizenship; GB				
Residence:	12 Cotham Side Cotham, Bristol Same as residence	100001	P Great Britain				
Post Office Address:	Outro do l'asidence	-					
MAGINOL & Signature		Date					
Full Name of # 5 Joint inve	ntor: Frederick A Perner		Citizenship: US				
Residence:	3234 Ramona St. Palo Alto Calif	iomia 94					
Post Office Address:	Same As Residence						
inventor's Signature		Date					
•							
Full Name of # 6 joint inver	<del></del>		Citizenship: US				
Residence:	1123 Milky Way Cupertino CA	95014					
Post Office Address:	Same as residence	· · · · · · · · · · · · · · · · · · ·					
Inventor's Signature		D-1-					
		Date					
Full Name of # 7 joint inven	tor Konnath K Smith		ANN				
Residence:	11776 W Rader Dr Boise, ID 83	713	Citizenship:US				
	_	7.13					
Post Office Address:	Same as residence						
Inventor's Signature		Date					
Full Name of # 8 joint Inven	tor: Stewart R. Wyatt		Citizenship:US				
Residence:	10476 Barnsdale Dr Boise, ID 83	3704					
Post Office Address:	Same as residence						
nventor's Signature		Date					

(WED) 4. 3'02 15:59/ST. 15:55/NO. 4800000311 P 12

PATENT APPLICATION

# DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

ATTORNEY DOCKET NO. 10012432 -1

Asa	below	named	inventor.	I hereby	declare that:	

My residence/post office address and citizenship are as stated below next to my name;

and joint inventor (if plant is sought on	iurai ne the inve	imes are listed below) o ention entitled:	f the subject matter	sted below) or an original, first which is claimed and for which		
Error Correction Codin	g And i	Decoding In A Solid-Stat	te Storage Device			
the specification of w	hich is	attached hereto unless t	he following box is a	becked:		
(X) was filed on						
(X) was filed on <u>Jul 25, 2001</u> as US Application No. or PCT International Application Number <u>09/915194</u> and was amended on (if applicable).						
moluumg me dalms. a	s amer	viewed and understood	the contents of the	above-identified specification,		
Foreign Application(s) and/o						
material commette baten	DRIGHT ALL	ts under Title 35, United Stat Id have also identified below a ation on which priority is clair	ARY fotolog sanlication for	any foreign application(s) for patent or patent or patent or inventor(s) certificate having		
COUNTRY		APPLICATION NUMBER	DATE FILED	PRIORITY CLAIMED UNDER 35 U.S.C. 119		
				YES: NO:		
				YES: NO;		
Provisional Application I hereby claim the benefit usbelow:	nder Title	35, United States Code Sec	tion 119(e) of any United	States provisional application(s) listed		
	<u> </u>	APPLICATION NUMBER	FILING DATE	$\neg$		
			,			
				→		
manner provided by the first information as defined in Titl	paragraç e 37. Co	on the claims of this application of Title 35. United States	ion is not disclosed in the Code Section 112, t ackn tion 1.56(a) which conver	States application(s) listed below and, a prior United States application in the owledge the duty to disclose material and between the filing date of the prior		
AFFLICATION NUMBER		FILING DATE	STATUS (pa	elented/pending/abandused)		
POWER OF ATTORNEY: As a named inventor, I here Dustness in the Patent and Tr	iby appoi ademark	int the following attorney(s) Office connected therewith:	and/or agent(s) to prosec	cute this application and transact all		
Customer	Number	022879	Place Customer Number Bar Code Label here			
Send Correspondence to: HEWLETT-PACKARD CO	PANY		Direct Telephone	Calls To:		
Intellectual Property Admi P.O. Box 272400	nistration	1	Richard P Berg,	Reg no 28,145		
Fort Collins, Colorado 80	527-240	0	(323) 934 2300			
with the knowledge the mprisonment, or both.	nat will under S opardiz	Grant Delieved to be the full false statements a Section 1001 of Title 11 e the validity of the app	ue; and further that nd the like so mad 8 of the United State lication or any patent	e true and that all statements these statements were made to are punishable by fine or es Code and that such willful tissued thereon.		
		· · · · · · · · · · · · · · · · · · ·	Citizenship: US			
	esidence: 2214 Grainmill Court Richmond, VA 23233 USA					
st Office Address: Same as Residence						

Received from < 13239340202 > at 4/3/02 6:56:45 PM [Eastern Standard Time]

Date

# DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION (continued)

ATTORNEY DOCKET NO. 10012432 -1

Full Name of # 2 joint invento	r: Jonathan Jedwab	Citizenship: GB
Residence:	Flat 17 Parklands 27 Tyndalis Park Roa	d Bristol, England B#8 IPQ
Post Office Address:	Same as residence	\$ 55
Inventor's Signature	Sectural Date	1 24 2001
Full Name of # 3 joint invento	r David H. McIntyre	Gitzenship: US
Residence:	13076 W Woodspring Street Boise, ID	
Post Office Address:	Same as Residence	
Inventor's Signature	Date	
Full Name of # 4 joint invento	r: Kenneth Graham Paterson	Citizenship: GB
Residence:	12 Cotham Side Cotham, Bristol BS6 5	TP Great Britain
Post Office Address:	Same as residence	
Inventor's Signature	Date	
Full Name of # 5 joint inventor	Frederick A Perner	Citizenship: US
Residence:	3234 Ramona St. Palo Alto California 9	4306
Post Office Address:	Same As Residence	
Inversior & Signature	Date	
Full Name of # 6 Joint inventor	: Gadiel Seroussi	Citizenship: US
Residence;	1123 Milky Way Cupertino CA 95014	
Post Office Address;	Same as residence	
जिस्साल इ अञ्चारायम	Date	
Full Name of #7 joint inventor	Kenneth K Smith	Cittzenship:US
Residence;	11776 W Rader Dr Boise, ID 83713	
Post Office Address:	Same as residence	
Inventor's Signature	Date	
Full Name of # 8 joint inventor:	Stewart R. Wyatt	Citizenship:US
Residence:	10476 Barnsdale Dr Boise, ID 83704	-
Post Office Address:	Same as residence	
nventor's Signal (Ire	Date	

PA	TE	NT	A	PPL	JC	A	T	O	N	

DECLARATION FOR PATENT		ER OF ATTORNEY	ATTORN	EV DOCKET NO. 10012432 -1
		I hereby declare that:	······································	<u></u>
		dress and citizenship are		
and joint invento a patent is sough	r (if plural ni it on the inv	ames are listed below) o	f the subject matter	sted below) or an original, firs which is claimed and for which
the specification	of which is	attached hereto unless	the following box is o	:hecked:
		2001 as US App		
Number	<u>09/915194</u>	and was amend	fed on	(if applicable).
disclose all inform	ms, as ame nation which	inded by any amendment is material to patentable	it(s) referred to show	e above-identified specification ve. I acknowledge the duty to CFR 1.56.
Foreign Application(s				
Inventor(s) certificate	listed below a	ils under Title 35, United Sta nd have also identified below : ation on which priority is etal	any foreion annlication for	any foreign application(s) for patent o patent or inventor(s) certificate having
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Provisional Application			4 <del>9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9</del>	
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		APPRICATERVISIONE	FRAGDATI	_
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manner provided by the information as defined	natter or each he first paragra in Title 37, Co	ion the craims of this application of Title 35. United States	ion is not disclosed in the Code Section 112, I acknowled tion 1 55(a) which provide	States application(s) listed below and, prior United States application in the owledge the duty to disclose material and between the filing date of the prior
A PRESENT YESINE I	E/MFF);	FRINCISS TE	67271996	A box college and representations (5)
···	<del></del>		27.5199,52	Assessed Assessants
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Send Corresponder HEWLETT-PACKAR		1 E . adman	Direct Telephone	Cells To:
Intellectual Property		0	Richard P Berg, I	Reg no 28 145
P.O. Box 272400 Fort Collins, Colora	de ONESTAA		(323) 934 2300	
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with the knowled imprisonment, or t	ge that will oth under	Multalee statements a	ue; and further that nd the like so mad R of the United State	e true and that all statements these statements were made a are punishable by fine or as Code and that such willful issued thereon.
Full Name of Inventor:	James And	rew Davis	Citizenship: US	
Residence:		nmili Court Richmond, V		
Post Office Address:	Same as R		- The state of the	The second of th

(Use Page Two For Additional Inventor(s) Signature(a))

Page 1 of -2

Investor's Signature Rev DE/01 (DecPer)

#### ATTORNEY DOCKET NO. 10012432 -1 **DECLARATION AND POWER OF ATTORNEY** FOR PATENT APPLICATION (continued) Full Name of # 2 joint inventor: Jonathan Jedwab Citizenship: GB Flat 17 Parklands 27 Tyndalis Park Road Bristol, England B58 IPQ Residence: Same as residence Post Office Address: Inventor's Signature Date Full Name of # 3 joint inventor: David H. McIntyre Citizenship: US 13076 W Woodspring Street Bolse, ID 83713 Same as Residence Full Name of # 4 joint inventor: Kenneth Graham Paterson Citizenship: GB 12 Cotham Side Cotham, Bristol 886 5TP Great Britain Residence: Same as residence Post Office Address: INVOICE'S SOMETIME Date Full Name of # 5 joint inventor: Frederick A Perner Citizenship: US 3234 Ramona St. Palo Alto California 94306 Residence: Same As Residence Post Office Address: INVENTOR & SIGNATURE Date Full Name of # 6 joint inventor: Gadle! Seroussi Citizenship: US 1123 Milky Way Cupertino CA 95014 Residence: Post Office Address: Same as residence BRIDGE & SERVICE Date Full Name of # 7 joint inventor: Kenneth K Smith Citizenship:US 11776 W Rader Dr Bolse, ID 83713 Rasidence: Post Office Address: Same as residence Full Name of # 8 joint inventor, Stewart R. Wyatt Citizenship:US 10476 Barnsdale Dr Bolse, (D. 83704 Residence: Post Office Address: Same as residence 22 Oct 2001

(WED) 4. 3'02 16:00/ST. 15:55/NO. 4800000311 P 16

DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION	ATTORNEY DOCKET NO. 10012432 -1
As a below named inventor, I hereby declare that:	
My residence/post office address and citizenship are as	stated below post to my need.
I believe I am the original time and	broked bolow hext to my hame;
I believe I am the original, first and sole inventor (if onl and joint inventor (if plural names are listed below) of the a patent is sought on the invention entitled:	e subject matter which is claimed and for which
Error Correction Coding And Decoding In A Solid-State S	torage Device
the specification of which is attached hereto unless the i	

(X) was filed on Jul 25, 2001 as US Application No. or PCT International Application Number <u>09/9151</u>94 and was amended on \_ (if applicable). I hereby state that I have reviewed and understood the contents of the above-identified specification. including the claims, as amended by any amendment(s) referred to above. I acknowledge the duty to disclose all information which is material to patentability as defined in 37 CFR 1.56.

#### Foreign Application(s) and/or Claim of Foreign Priority

I hereby claim foreign priority benefits under Title 35, United States Code Section 119 of any foreign application(s) for patent or Inventor(s) certificate listed below and have also identified below any foreign application for patent or inventor(s) certificate having a filing date before that of the application on which priority is claimed:

COUNTRY	APPLICATION NUMBER	DATE FILED	PRIORITY CLAIMED	UNIDER 35 U.S.C. 119
			YES:	NO:
Provisional Application			YES:	NO:

I hereby claim the benefit under Title 35, United States Code Section 119(e) of any United States provisional application(s) listed

APPLICATION NUMBER	FILING DATE
· · · · · · · · · · · · · · · · · · ·	

U. S. Priority Claim

I hereby claim the benefit under Title 35, United States Code, Section 120 of any United States application(s) listed below and, insofer as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code Section 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, Section 1.56(a) which occurred between the filling date of the prior application and the national or PCT international filing date of this application:

APPLICATION NUMBER	FILING DATE	STATUS (patented/pending/abandoned)
		Parado Maria Strategy
OWER OF ATTORNEY:		

As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith:

> Flace Customer Customer Number 022879 Number Bar Code Label here

Send Correspondence to: HEWLETT-PACKARD COMPANY Intellectual Property Administration P.O. Box 272400 Fort Collins, Colorado 80527-2400

Direct Telephone Calls To:

Richard P Berg, Reg no 28,145

(323) 934 2300

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful faise statements may jeopardize the validity of the application or any pat

		philograph of guy baretit issued (neteou.	
Full Name of Inventor:	James Andrew Davis	Citizenship: US	
Residence:	2214 Grainmill Court Richmond,		
Post Office Address:	Same as Residence		
Inventor's Signature			

FROM LADAS & PARRY - L.	. A.	1323934020	2
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(WED) 4. 3'02 16:01/ST. 15:55/NO. 4800000311 P 17

# DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION (continued)

ATTORNEY DOCKET NO. 10012432 -1

Full Name of # 2 joint invent	or: Jonathan Jedwab	Citizenship: GB
Residence:	Flat 17 Parklands 27 Tyndalls Park R	
Post Office Address:	Same as residence	
Inventor's Signature	Dat	е
Full Name of # 3 joint invento	r: David H. McIntyre	Citizenship: US
Residence:	13076 W Woodspring Street Boise,	
Post Office Address:	Same as Residence	
Inventor's Signature	Dat	9
Full Name of # 4 Joint invento	- Kenneth Graham Paterson	Citizenship: GB <sub>1</sub> 10 P
Residence:	1.2 Cotham Side Cotham, Brietol BS6	
Post Office Address:	Same as residence 13 VI CAR AC	PO(a/2001) TWILSTEX
Full Name of # 5 joint invento	r: Frederick A Perner	Citizenship: US
Residence:	3234 Ramona St. Palo Alto California	94306
Post Office Address:	Same As Residence	
linientor's Signature	Date	
Full Name of # 6 joint inventor	r. Gadiel Seroussi	Citizenship: US
Residence:	1123 Milky Way Cupertino CA 950	
Post Office Address:	Same as residence	
Friender's Signature	Date	
Full Name of # 7 Joint Inventor	Kenneth K Smith	Citizenship:US
Residence:	11776 W Rader Dr Boise, ID 83713	
Post Office Address:	Same as residence	
Inventor s Signature	Dete	
Full Name of # 8 joint inventor:	Stewart R. Wyatt	Citizenship:US
Residence:	10476 Barnsdale Dr Boise, ID 83704	
Post Office Address:	Same as residence	
mentor's Signature	Date	

DECLARATION AND FOR PAYENT APPLIC	POWER OF ATTORNEY CATION	ATTOR	NEY DOCKET NO. 10012432 -1
As a below named inve	entor, I hereby declare that:	***************************************	
	ce address and citizenship a		xt to my name:
I believe I am the origi	nal, first and sole inventor ural names are listed below	tif only one name is I	listed below) or an original, fire which is claimed and for which
	And Decoding In A Solid-	State Storage Device	
the specification of wh	ich is attached hereto unle	on the following boards	
Number <u>09/91</u>	ul 25, 2001 as US A 5194and was am	ended on	international Application (if applicable).
incivuino the claims, as	ave reviewed and understo s amended by any amendn which is material to patent	nont/el-referred to sho	e above-identified specification ve. I acknowledge the duty t CFR 1.56.
Foreign Application(s) and/or			
I hereby claim foreign priority inventor(s) certificate listed b	benefits under Title 35. United :	w any foreign application fo	any foreign application(s) for patent of patent or inventor(s) certificate having
COUNTRY	APPLICATION NUMBER	CATÉ FILED	PRICESTY CLARSED UNDER 35 U.S.C. 115
			YES: RO.
		W1+1-	YES: NO:
hereby claim the benefit uno below:	der Title 35. United States Code:	Section 119(e) of any United	d States provisional application(s) liste
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formation as defined in Title	raiadrann na Litus 35 Illium Com	es Code Section 112, I ack	e prior United States application in the nowledge the duty to disclose material red between the filing date of the prior
AFFLICA IKON HUMBER	FIUNG DATE	Status o	vol ent edipendinguapanéenegs
	-		
OWER OF ATTORNEY: s a named inventor, I hereb usinces in the Patent and Trad	y appoint the following attorney. Jemark Office connected therewit	n:	cute this application and transact all
Customer N	umber 022879	Place Customer Number Bar Code Label nere	
Send Correspondence to:		Direct Telephon	e Calla To;
HEWLETT-PACKARD COMI Intellectual Property Admini		Dishard D Dam	B 3B 445
P.O. Box 272400 Fort Collins, Colorado 805:		(323) 934 230	Reg no 28,145
ith the knowledge the	at willful false statements nder Section 1001 of Title pardize the validity of the a	true; and further that and the like so mad 18 of the Hollad State	te true and that all statements these statements were made the are punishable by fine or es Code and that such willful it issued thereon.
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	as Residence	THE EUEUU WOM	
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rentor's Signature	as residence		

Date

Rev 06/91 (DecPar)

# DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION (continued)

ATTORNEY DOCKET NO. 10012432 -1

Full Name of # 2 joint inver	ro: Jonathan Jedwab		Citizenship; GB
Residence:	Flat 17 Parklands 27 Tyndalls	Park Road	Bristol, England B58 IPQ
Post Office Address:	Same as residence		
Inventor's Signature		Date	
Full Name of # 3 joint inven	tor: David H. McIntyre		Citizenship: US
Residence:	13076 W Woodspring Street	Boise, ID 8	33713
Post Office Address:	Same as Residence		
Inventor's Signature		Date	
Full Name of # 4 joint invent Residence:	tor Kenneth Graham Paterson  12 Cotham Side Cotham, Brist	A PSE ETI	Citizenship; GB
Post Office Address:	Same as residence	O B30 311	Great Britain
Inventor's Signature		Date	
Full Name of # 5 joint invent Residence; Post Office Address:	or: Frederick A Perner  3234 Ramona St. Palo Alto Ca  Same As Résidence	lifornia 943	Citizenship: US
mverify a Signature	E. a. Penne	Date	Sept 26,2001
Full Name of # 6 joint invent	or: Gadiel Seroussi		Citizenship:US
Residence:	1123 Milky Way Cupertino CA	95014	
Post Office Address:	Same as residence		
INVERSES SIGNATURE		Date	
Full Name of # 7 joint invento	x: Kenneth K Smith		Citizenship:US
Residence:	11776 W Rader Dr Boise, ID 8	3713	· · · · · · · · · · · · · · · · · · ·
Post Office Address:	Same as residence		
nventor's Signature		Date	
ull Name of # 8 joint invento	Stewart R. Wyatt		Citizenship.US
esidence:	10476 Barnsdale Dr Bolse, ID 8	3704	
ost Office Address:	Same as residence		
Water's Signature		Date	

#### PATENT APPLICATION

Page 1 of 2

DECLARATION	AND POWER	OF	ATTORNEY
FOR PATENT A	PPLICATION	_ •	

ATTORNEY BOCKET NO. 10012432 -1

As a below named inventor, I hereby declare that:

My residence/post office address and citizenship are as stated below next to my name;

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

Error Correction C	oding And	Decoding In A Solid-Stat	e Storage Device	
the specification	of which is	attached hereto unless ti	a tollowing boy in	about a discourant and
(X) was filed				
	09/915194			International Application
				(if applicable).
		eviewed and understood nded by any amendment i is material to patentabili		e above-identified specification, ve. I acknowledge the duty to CFR 1.58.
Foreign Application(s)				
		its under Title 35, United State nd have also identified below a ation on which priority is claim		any foreign application(s) for patent or patent or inventor(s) certificate having
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U. S. Priority Claim	<u> </u>	<u> </u>		States application(s) listed below and,
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	I hereby appear	int the following attorney(s) a Office connected therewith:	Place Customer Number Bar Code Label here	cute this application and transact at
Send Correspondence	e to:		Direct Telephone	Calls To
HEWLETT-PACKARI Intellectual Property	O COMPANY		·	
P.O. Box 272400			Richard P Berg,	Reg no 28,145
Fort Collins, Colorad	0.80527-240	0	(323) 934 2300	·
rith the knowledg nprisonment, or be alse statements ma	re that will oth, under s by jeopardiz	ful false statements an Section 1001 of Title 18 e the validity of the appli	d the like so mad	e true and that all statements these statements were made e are punishable by fine or es Code and that such willful issued thereon.
ull Name of Inventor:	James Andr			·
esidence:	2214 Grain	mill Court Richmond, VA	23233 USA	
nat Office Address:	Same as R	esidence		
ventor's Signature				

(Use Page Two For Additional Inventor(s) Signature(s))

Rev 06/01 (DecPur)

# DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION (continued)

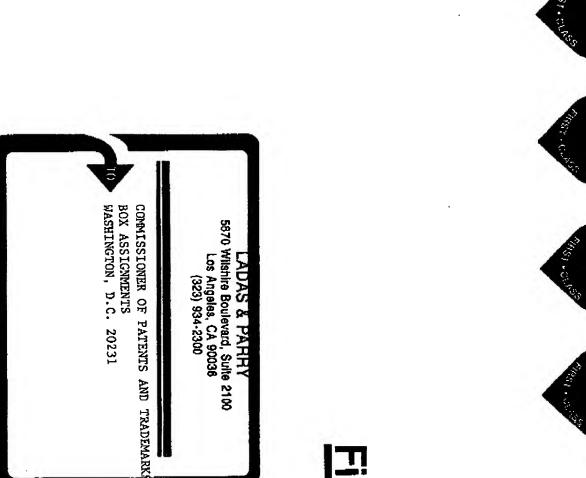
ATTORNEY DOCKET NO. 10012432 -1

Full Name of # 2 joint	nversor: Jonathan Jedwab	Citizenship: GB	
Residence:	Flat 17 Parklands 27 Tyndalls Pa	k Road Bristol, England B58 IPQ	
Post Office Address:	Same as residence		
Inventor's signature			
		Date	
Full Name of # 3 joint is	wantor: David H. McIntyre	Citizenship: US	
Rosidence;	13078 W Woodspring Street Bols		
Post Office Address:	Same as Residence		
inventor's Signature			
	· · · · · · · · · · · · · · · · · · ·	Date	
Full Name of # 4 joint in	ventor; Kenneth Graham Paterson		
Residence:	12 Cotham Side Cotham, Bristol E	Citizenship: GB	:
Post Office Address:	Same as residence	- orthodore chirans	
inventor's Signature			
months a reflecting		Date	· · · · · · · · · · · · · · · · · · ·
Full Name of # 5 joint in	ventor: Frederick A Perner		
Residence:	3234 Ramona St. Palo Alto Califor	Cktzenship: US	
Post Office Address:	Same As Residence	102 94306	
Inventor's SIGNATURE		ale	
Full Name of 8 6 inject to	rentor: Gadiel Seroussi		
Residence:	The state of the s	Citizenahlp: US	
Post Office Address:	1123 Milly Way Cupartino CA 9	074	
ADDRESS:	Same as residence		
Charles & Sharen	Mious	9/14/2001	
	3.	<b>K</b>	
Full Name of \$7 joint inv	entor: Kenneth K Smith	Citizenship:US	
Residence:	11776 W Rader Dr Boise, ID 8371		<del></del>
Post Office Address:	Same as residence		
Minister's Signature			
	Da	<del>10</del>	
Full Name of # 8 joint invo	ontor: Stewart R. Wyatt	Citizenship:US	
Residence;	10476 Barnsdale Dr Bolse, ID 8370		
Post Office Address;	Same as residence	197	
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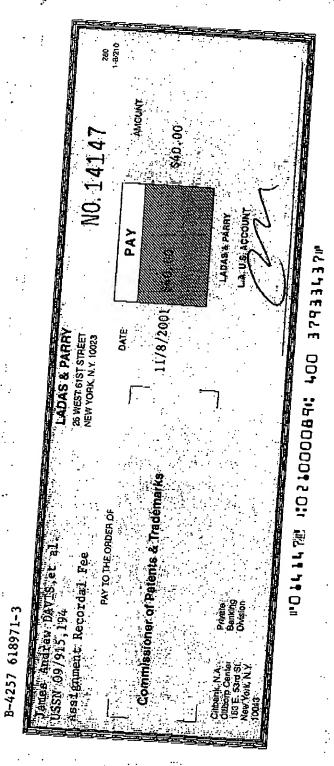
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U.S. Department of Commerce Patent and Trademark Office

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the Honorable Commissioner of Patents and Trademarks: Please recor	d the attached original documents or copy thereof.
Name of conveying party(les):	Name and address of receiving parties:
Hewlett-Packard Limited Jonathan Jedwab	Name: Hewlett-Packard Company
Kenneth Graham Paterson	Internal Address:
Iditional name(s) of conveying parties attached? [] YES [X] NO	
Nature of conveyance: [X] Assignment [] Merger	Street Address: 3000 Hanover Street
[] Security Agreement [] Change of Name	City: Palo Alto State: California ZIp: 94304 Country: U,S,A.
[X] Other Assignment by operation of law	Additional name(s) & address(es) attached? []YES [X]NO
Execution Dates: October 29, 2001	
Application number(s) or patent number(s):	
If this document is being filed together with a new application, the ex	recution date of the application is:
A. Patent Application No(s).: 09/915,194	B. Patent No(s).:
Additional numbers a	ttached? [] YES [X] NO
Name and address of party to whom correspondence concerning document should be mailed:  Richard P. Berg	6. Total number of application and patents involved: [ 1 ]
ne: LADAS & PARRY	7. Total fee 937 CFR 3.41)\$ 40,00
mal Address:	[X] Enclosed
et Address: 5570 Wilshire Boulevard, #2100	Any additional fees which may be required are
: Los Angeles State: CA Zip: 90036	[X] Authorized to be charged to deposit account
	No. 12-0415
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Ross A. Schmitt  Ama of Paragraphics  Ama of Paragr	Acliff November 8, 2001
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lished by THE BUREAU OF NATIONAL AFFAIRS, INC., Washington, D.C. 20037

B-4257 618971-3 Page 2 of 2

#### CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first-class mail in an envelope addressed to:

Commissioner of Patents and Trademarks Box Assignments Washington, D.C. 20231, on <u>November 8, 2001</u>

Karen Lao

USSN 09/915;194% B-4257 618971-3

#### ASSIGNMENT

WHEREAS, Hewlett-Packard Limited (an English Company of Bracknell, England) is, by operation of Section 39 of the United Kingdom Patents Act of 1977 relating to employee inventions, a joint first owner of the invention entitled:

Error Correction Coding and Decoding in a Solid-State Storage Device

devised by:

James A. Davis, Jonathan Jedwab, David H. McIntyre, Kenneth Graham Paterson, Frederick A. Perner, Gadiel Scroussi and Kenneth K. Smith, Steward R. Wyatt

NOW, THEREFORE, in accordance with an Agreement between Hewlett-Packard Limited and Hewlett-Packard Company (a Delaware corporation having its principal place of business in Palo Alto, California), Hewlett-Packard Limited hereby perfects the assignment to Hewlett-Packard Company, its successors and assigns, of its share of (a) the right to file and prosecute an application for Letters Patent for the above identified invention in each country worldwide, including, in particular, the Letters Patent for United States Patent Application entitled:

#### Error Correction Coding and Decoding in a Solid-State Storage Device

and executed by the below named inventors on the indicated dates

executed by Jonathan Jedwah	on 1 October 2001
executed by Kenneth Graham Paterson	on 20 September 2001
executed by	on
executed by	on
executed by	on

and (b) the right to claim any and all priority rights, especially from the first-filed patent or utility model applications, relative to the above-identified invention, as well as (c) the right to obtain Letters Patents in each country and the right, title and interest in such Letters Patents as consistent with the Agreement between Hewlett-Packard Limited and Hewlett-Packard Company,

IN WITNESS WHEREOF, this Assignment is executed by a duly authorized representative of Hewlett-Packard Limited

By:

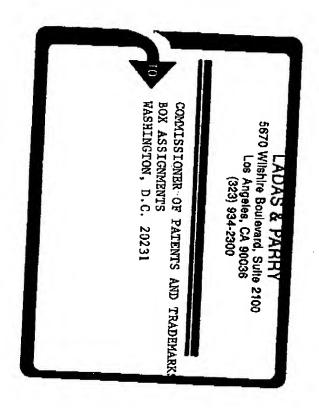
Richard A. Lawrence

Title: Senior IP Attorney

Date:

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To:	USPD (kl)	Our reference: <u>B-4257_618971-3</u>
FROM: COMMISSIO	WATER OFFICE	Date mailed: <u>November 8, 2001</u>
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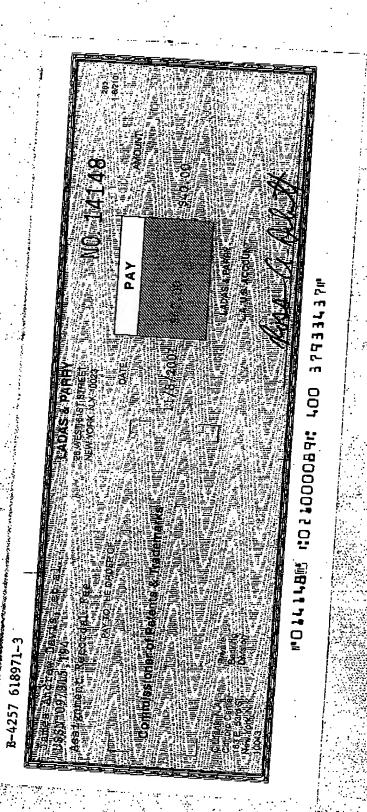


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Page 1 of 2

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Name of conveying party(les):	Name and address of receiving parties:
James Andrew Davis	parties.
David H. McIntyre	Name: <u>Hewlett-Packard Company</u>
Kenneth K. Smith	Internal Address:
Stewart R. Wyatt	
Frederick A. Perner	Street Address: 2000 Hanavar Otalia
Gadiel Seroussi	Street Address: 3000 Hanover Street
ditional name(s) of conveying parties offered to your process	
ditional name(s) of conveying parties attached? [] YES [X] NO	City: Pale Alte State: California
Nature of conveyance:	City: Palo Alto State: California
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aution Date(s) September 27, 2001 by James Andrew Davis	
October 23, 2001 by David H. McIntyre	
October 18, 2001 by Kenneth K. Smith	
October 22, 2001 by Stewart R. Wyatt	
September 26, 2001 by Frederick A. Perner	
September 14, 2001 by Gadiel Seroussi	
Application number(s) or patent number(s):	
If this document is being filed together with a new application, the exc	ecution date of the application is:
	The state of the appropriet is.
A. Patent Application No(s).: 09/915,194	B. Patent No(s).:
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concerning document should be mailed:	7. Total fee 937 CFR 3.41)\$ 40.00
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: Los Angeles State: CA Zip: 90036	o. Deposit account number:
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Statement and signature.	
To the best of my knowledge and bellef, the foregoing in	formation is true and correct and any
attached copy is a true copy of the original document.	the same and correct and any
	<b>△</b>
Richard P. Berg	November 9, 2024
Name of Person Signing Signatu	November 8, 2001
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blished by THE BUREAU OF NATIONAL AFFAIRS, INC., W	ashington, D.C. 20037

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By: Karyn Jao

(WED) 4. 3'02 16:05/ST. 15:55/NO. 4800000311 P 33

PATENT APPLICATION

ATTORNEY DOCKET NO. 10012432 -1

When recorded please return to:

HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P. O. Box 272400
Fort Collins, Colorado 80527-2400

#### ASSIGNMENT OF PATENT APPLICATION

I/We, the undersigned (each) have agreed and hereby agree to assign to HEWLETT-PACKARD COMPANY, a Delaware corporation having its principal place of business in Palo Alto, California, (hereinafter HP), in furtherance of my/our obligations to HP, and do hereby assign and transfer to HP, its successors and assigns, the entire right, title and interest, including the right of priority, in, to and under an application for Letters Patent of the United States entitled:

Filing date: 25 July 2001	
Letters Patent, and any and all Letters Patent of	Application No.: 09/915,194  forth therein, and any and all continuations wals of and substitutes for said application for sait the United States and of countries foreign therety reissues, or reexaminations, or extensions of said
of the term or terms for which said Letters Patent	ns in my/our name for Letters Patent in any country ins, nominees or legal representatives, to the full en- respectively may be granted, reissued or extended held and enjoyed by me/us had this assignment, and
further covenant and agree that I/we will, each to execute and deliver all such papers as may be invention(s) or improvement(s), said application and nominees or legal representatives, and I/we agree to facts respecting said invention(s) or improvement(s) in any legal proceedings, to sign all lawful pacontinuations, C-I-P's, reissue and foreign applicating generally to do everything possible to aid Herepresentatives to obtain and enforce, for its or the	right to convey the entire interest herein assigned ecute any agreement in conflict herewith, and I/witime a request is made, and without undue delay necessary or desirable to perfect the title to said I said Letters Patent, to HP, its successors, assigns to communicate to HP, or to its nominee, all known), sald application and said Letters Patent, to testify pers, to execute all disclaimers and divisionals pers, to make all rightful oaths and declarations, and P, its successors, assigns, nominees and legated heir own benefit, proper patent protection for said its provided the expenses which may be incurred by the paid by HP;
patents on applications as aforesaid, to issue to Highlight and all Letters Patent for said inventions is important.	nmissioner of Patents and Trademarks of the United oreign to the United States whose duty it is to issue P, as assignee of the entire right, title and interest, provement(s), including any and all Letters Patent of the or as a result of the application aforesaid, in
shall have been made known to them by the United	
iventor's Typed Name: James Andrew Davis	our hand(s) and seal(s):  assignment Signed: 27/9/01  Date Application Signed: 27/9/01
ounty of Richmond)	. \ /
Before me this 27 day of September 2001, personally	

09-30-01

My commission expires

#### FROM <u>LADAS & PARRY - L.</u> A. 13239340202

When recorded please return to:

HEWLETT-PACKARD COMPANY Intellectual Property Administration P. O. Box'272400 Fort Collins, Colorado 80527-2400 (WED) 4. 3'02 16:06/ST. 15:55/NO. 4800000311 P 34

PATENT APPLICATION

ATTORNEY DOCKET NO. 10012432 -1

### ASSIGNMENT OF PATENT APPLICATION (cont.)

	Date As	signment Signed
Inventor's Signature (Seal	)	
Inventor's Typed Name: D	avid H. McIntyre	Date Application Signed:
State of	)	
<b>m</b>	) ss.:	
County of	)	
Before me this d	ay of personally	appeared <u>David H. Mchrtyre</u>
is personally known or pri instrument of assignment t	oved to me on the basis of satisfactory to be his/her free act and deed.	appeared <u>Dayld H. Mchttyre</u> evidence to be the person who acknowledged the foregoin
		Notary Public
		My commission expires:
Inventor's Signature (Seal)	Date Assi	gnment Signed:
nventor's Typed Name: Fre		
	SEIGH A. FEITER	Date Application Signed:
State of	)	
County of	) sş.: )	
Before me this do	· u mē	
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		Notary Public
		My commission expires:
ventor's Signature (Seal)	Date Assign	nment Signed:
ventor's Typed Name: Gadie	al Seroussi	Date Application Signed:
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unty of	) sp.; )	- <u>-</u> -
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	d to me on the basis of satisfactory evice his/her free act and deed.	eared <u>Gadiel Seroussl</u> who dence to be the person who acknowledged the foregoing
		Notary Public My commission expires:

(Use Page Three For Additional Inventor(s) Signature(s))

Page 2 of 3

When recorded please return to:

HEWLETT-PACKARD COMPANY Intellectual Property Administration P. O. Box 272400 Fort Collins, Colorado 80527-2400

#### (WED) 4. 3'02 16:06/ST. 15:55/NO. 4800000311 P 35

PATENT APPLICATION ATTORNEY DOCKET NO. \_\_10012432-1

# ASSIGNMENT OF PATENT APPLICATION (cont.)

Inventor's Signature (Seal)	<del></del>	Date Assignment Signed:
inventor's Typed Name: Kenneth K. Smi	• -	
	<u>un</u>	Date Application Signed
State of	)	
County of	) ss.: )	
Before me this day of		
is personally known or proved to me or instrument of assignment to be his/her fr	the basis of	personally appeared <u>Kenneth K. Smith</u> satisfactory evidence to be the person who acknowledged the foregoin
The state of the s	ee acr and dee	d.
		Notary Public
		My commission expires:
Inventor's Signature (Seat)	·····	Date Assignment Signed:
Inventor's Typed Name: Stewart R. Wyatt	<u>-</u>	Date Application Signed
State of	)	
County of	) ss.; )	
Pofe.	•	
Before me this day of	<u> </u>	personally appeared Stewart R. Wyatt who
instrument of assignment to be his/her free	act and deed.	personally appeared <u>Stewart R. Wyatt</u> who attractory evidence to be the person who acknowledged the foregoing
		Notary Public
		My commission expires:
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ventor's Signature (Seal)		Date Assignment Signed:
ventor's Typed Name:		Date Application Signed
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(WED) 4. 3'02 16:06/ST. 15:55/NO. 4800000311 P 36

PATENT APPLICATION

ATTORNEY DOCKET NO. 10012432 -1

When recorded please return to.

HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P O. Box 272400
Fort Collins, Colorado 80527-2400

#### ASSIGNMENT OF PATENT APPLICATION

I/We, the undersigned (each) have agreed and hereby agree to assign to HEWLETT-PACKARD COMPANY, a Delaware corporation having its principal place of business in Palo Alto, California, (hereinafter HP), in furtherance of my/our obligations to HP, and do hereby assign and transfer to HP, its successors and assigns, the entire right, title and interest, including the right of priority, in, to and under an application for Letters Patent of the United States entitled:

under an application for Letters Palent of the Unit	and interest, including the right of priority, in, to and ed States entitled:
Error Correction Coding And Decoding In A Solid-S	State Storage Device
Filing date: 25 July 2001	Application No.: 09/915,194
continuations-in-part (C-I-Ps), divisionals, and ren Letters Patent, and any and all Letters Patent of	t forth therein, and any and all continuations, lewals of and substitutes for said application for said fithe United States and of countries foreign thereto by reissues, or reexaminations, or extensions of said
to be held and enjoyed by HP, its successors, assi- of the term or terms for which said Letters Paten	ons in my/our name for Letters Patent in any country, gns, nominees or legal representatives, to the full end it respectively may be granted, reissued or extended, held and enjoyed by me/us had this assignment, and
and that I/we have not executed and will not ex- further covenant and agree that I/we will, each execute and deliver all such papers as may be invention(s) or improvement(s), said application an nominees or legal representatives, and I/we agree facts respecting said invention(s) or improvement( in any legal proceedings, to sign all lawful p continuations, C-I-P's, reissue and foreign applicat generally to do everything possible to aid I representatives to obtain and enforce, for its or	Ill right to convey the entire interest herein assigned, recute any agreement in conflict herewith, and I/we time a request is made, and without undue delay, necessary or desirable to perfect the title to said d said Letters Patent, to HP, its successors, assigns, to communicate to HP, or to its nominee, all known s), said application and said Letters Patent, to testify expers, to execute all disclaimers and divisionals, ions, to make all rightful oaths and declarations, and HP, its successors, assigns, nominees and legal their own benefit, proper patent protection for said ries provided the expenses which may be incurred by are paid by HP;
patents on applications as aforesaid, to issue to hany and all Letters Patent for said invention(s) or in	immissioner of Patents and Trademarks of the United foreign to the United States whose duty it is to issue IP, as assignee of the entire right, title and interest, inprovement(s), including any and all Letters Patent of ted on or as a result of the application aforesaid, in
We further authorize and direct HP attorney application now identified by the altorney docket n shall have been made known to them by the United	es to insert the serial number and filing date of said number and title set forth above as soon as the same I States Patent and Trademark Office.
IN WITNESS WHEREOF, I/we hereunto set my/	our hand(s) and seal(s):
Inventor's Signature (Seal)	Assignment Signed:
inventor's Typed Name: James Andrew Davis	Date Application Signed:
State of	
´) ss.:	•
County of )	
Before me this day of personal sparsonally known or proved to me on the basis of satisfaction satisfactions and deed.	who present <u>James Andrew Davis</u> who pays evidence to be the person who acknowledged the foregoing
	Notary Public My commission expires:

Rev 05/U1 (Assign)

(Use Page Two For Additional Inventor(s) Signature(s))

Page 1 of 3

(WED) 4. 3'02 16:06/ST. 15:55/NO. 4800000311 P 37

PATENT APPLICATION

ATTORNEY DOCKET NO. 10012432 -1

# When focusing theme relief to: Hemeet the Ckayed Company Indecided Properly Administration P. C. Box 575490 For Compa Columbo 80637-2400

#### ASSIGNMENT OF PATENT APPLICATION (cont.)

IN WITHESS WHEREOF, I we hereunto set	my/our hand(s) and seal(s):
Inventor's Signature (Seal)	Date Assignment Signed: 23 Ochser 2001
	Date Application Signed: 23 October 200/
State of Idaha )	
County of Ada ) 33.:	
Before me this day of	personally appearedwh
instrument of assignment to be his/her free act and d	of satisfactory evidence to be the person who acknowledged the foregoin ead.
	Notary Public
	My controlssion expires:
	Pata Andrews Nicola
Inventor's Signature (Seal)	Date Assignment Signed:
Inventor's Typed Name: Frederick A. Perner	Oate Application Signed:
State of )	
County of ) ss.:	
Before me this day of is personally known or proved to me on the basis o instrument of assignment to be his/her free act and de	f satisfactory evidence to be the person who acknowledged the foregoing
	Notary Public My commission expires:
Inventor's Signature (Seal)	
Inventor's Typed Name; Gadiel Seroussi	
	Date Application Signed:
State of ) ss.:	
County of	<b>3</b> *
Before me this day of is personally known or proved to me on the basis of instrument of assignment to be his/her free act and dee	personally appeared <u>Gadiel Seroussi</u> who salisfactory evidence to be the person who acknowledged the forecoing
	Notary Public
	My commission expires:

(Use Page Three For Additional Inventor(s) Signature(s))

Page 2 of 3

(WED) 4. 3'02 16:07/ST. 15:55/NO. 4800000311 P 38

PATENT APPLICATION

ATTORNEY DOCKET NO. 10012432-1

Nytes leasided bosse four to: Februitt Paukard Company Interstis Propert Admissiration F.O. Box 272400 Fon Colleg. Chicago 20527-2400

#### ASSIGNMENT OF PATENT APPLICATION (cont.)

IN WITNESS WHEREOF, I we	hereunto set	my/our hand(s) and seal	(s):
Inventor's Staneture (Seal)		Date Assignment Sign	od: 18 Oct '01
Inventor's Typed Name: Kenneth K. S	Parkh.		ation Signed_18 Oct '01
	MINTO	Date Applica	ation Signed 15 Oct 01
State of Idaho County of Ada	) ) 55.: )		
Before me this day of	e on the basis of	, personally appeared <u>Kan</u> satisfactory evidence to be a	nedla K. Smith the person who unknowledged the transport
			Motory Public My commission expires:
Inventor's Signature (Seal)		Date Assignment Signe	6: 22 October 2001
Inventor's Typed Name: Stewart R. W	yatt		tion Signed 22 Ochter 2007
State of Idaha	)		<u> </u>
County of Ada	) ss.: )		
Before me this day of is personally known or proved to me instrument of assignment to be his/her	on the basis of	, personally appeared <u>Stem</u> satisfactory evidence to be th t.	who e person who acknowledged the foregoing
			Notary Public
			My commission expires:
		Date Assignment Signed	
nventor's Signature (Seal)			
nventor's Typed Name:		Date Application	on Signed
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Balore me this day of personally known or proved to me o strument of assignment to be his/her f	on the basis of sairee act and deed.	personally appeared alistactory evidence to be the	person who acknowledged the foregoing
			Notary Public
			My commission expires:

Page 3 of 3

(Use Next Page For Additional Inventor(s) Signature(s))

When recorded please return to: HEWLETT-PACKARD COMPANY Intellectual Property Administration
P. O. Box 272400 Fort Collins, Colorado 80527-2400

#### (WED) 4. 3'02 16:07/ST. 15:55/NO. 4800000311 P 39

B-4257 618971-3 PATENT APPLICATION

ATTORNEY DOCKET NO. 10012432 -1

#### ASSIGNMENT OF PATENT APPLICATION

I/We, the undersigned (each) have agreed and hereby agree to assign to HEWLETT-PACKARD COMPANY, a Delaware corporation having its principal place of business in Palo Alto, California, (hereinafter HP), in furtherance of my/our obligations to HP, and do hereby assign and transfer to HP, its successors and assigns, the entire right, title and interest, including the right of priority, in, to and

Filing date: 25 J	uly 2001	Application No.: 09/915,194
and the invention continuations in particular areas are the continuations and the continuation are the continuatio	on(s) and improvement(s) art (C-I-P's), divisionals, and any and all letters. Percent and any and all letters.	set forth therein, and any and all continuations of renewals of and substitutes for said application for sain tof the United States and of countries foreign therefold any reissues, or reexaminations, or extensions of said
of the term or ten	ns for which said Letters P  v as the same would have	cations in my/our name for Letters Patent in any country assigns, nominees or legal representatives, to the full end attent respectively may be granted, reissued or extended been held and enjoyed by me/us had this assignment, and
further covenant a execute and deliving invention(s) or imponomines or legal facts respecting sain any legal procentinuations, C-I-I generally to do representatives to invention(s) or imponional delivers.	and agree that I/we will, ear all such papers as may rovement(s), said application representatives, and I/we agid invention(s) or improvem seedings, to sign all lawfors, reissue and foreign appeaverything possible to aid obtain and enforce for its	re full right to convey the entire interest herein assigned, of execute any agreement in conflict herewith, and I we tach time a request is made, and without undue delay, be necessary or desirable to perfect the title to said in and said Letters Patent, to HP, its successors, assigns, gree to communicate to HP, or to its nominee, all known ent(s), said application and said Letters Patent, to testify ull papers, to execute all disclaimers and divisionals, lications, to make all rightful paths and declarations, and delay the successors, assigns, nominees and legal or their own benefit, proper patent protection for said ountries provided the expenses which may be incurred by the expenses which may be incurred by the expenses of the expenses which may be incurred by the expenses of the expenses of the expenses which may be incurred by the expenses of the expenses of the expenses which may be incurred by the expenses of the expenses
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l/we further au application now idea shall have been mad	ithorize and direct HP attor ntifled by the attorney dock le known to them by the Un	meys to insert the serial number and tiling date of said et number and title set forth above as soon as the same lited States Patent and Trademark Office.
	HEREOF, I/we hereunto set	
ventor's Signature (Seal	<u>,                                      </u>	Date Assignment Signed:
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Before me this	lay of .	sonally appeared <u>James Andrew Davis</u> who
,	oved to me on the basis of salist to be his/her free act and deed.	factory evidence to be the person who acknowledged the foregoing
		Notary Public

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(Use Page Two For Additional Inventor(s) Signature(s))

Page 1 of 3

(WED) 4. 3'02 16:07/ST. 15:55/NO. 4800000311 P 40

When recorded please return to:
HEWLETT-PACKARD COMPANY
intellectual Property Administration
P. O. Rox 272400
Fort Collins, Colorado 80527-2400

# PATENT APPLICATION ATTORNEY DOCKET NO. \_\_10012432 -1

#### ASSIGNMENT OF PATENT APPLICATION (cont.)

	1	Date Assignment Signed:
Inventor's Signature (Seal)		and many military.
Inventor's Typed Name: David H. McInty	ne en	Date Application Signed:
State of	)	
	) ss.:	
County of	)	
Before me this day of s personally known or proved to me on astrument of assignment to be his/her fre		rsonally appeared David H. McIntyre factory evidence to be the person who acknowledged the fore
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<i>.</i>		My commission expires:
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ventor's Signature (Seal)	em o	Pate Assignment Signed: Supt 26, 2001
ventor's Typed Name: Frederick A. Perns		hate Assignment Signed: Supt 26, 2001  Date Application Signed: Supt 26, 2
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intor's Signature (Seal)  Intor's Typed Name: Gadlet Serousal  e of  http of  lefore me thus day of day for seconally known or proved to me on the	Dat  ) ss.: ) persor e hasis of entirence	Notary Public  Notary Public  My commission expires:  te Assignment Signed:  Date Application Signed:
entor's Signature (Seal) entor's Typed Name: Gadiel Serousal e of only of Defore me this day of	Dat  ) ss.: ) persor e hasis of entirence	Notary Public My commission expires:  te Assignment Signed:  Date Application Signed:

(Use Page Three For Additional Inventor(s) Signature(s))

Page 2 of 3

Rev 06/01 (Accign)

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When recorded please return to.
HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P. O. Box 272400
Fort Collins, Colorado 80527-2400

PATENT APPLICATION ATTORNEY DOCKET NO. 10012432-1

### ASSIGNMENT OF PATENT APPLICATION (cont.)

		Date Assignment Signed:	
inventor's Signature (Seal)		Date Assignment Signed:	
inventor's Typed Name: Kenneth	K. Smith	Date Application Stoned	
State of	)		
County of	) ss.: )		
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		My commission	<del>replas</del> :
		Date Assignment Signed:	
Inventor's Signature (Seal)			
Inventor's Typed Name: Stewart R	L Wyatt	Date Application Signed	
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(Use Next Page For Additional Inventor(a) Signature(s))

Page 3 of 3

When recorded please return to:

HEWLETT-PACKARD COMPANY Intellectual Property Administration P. O. Box 272400 Fort Collins, Colorado 80527-2400

#### (WED) 4. 3'02 16:08/ST. 15:55/NO. 4800000311 P 42 B-4257 618971-3

PATENT APPLICATION

ATTORNEY DOCKET NO. 10012432 -1

#### ASSIGNMENT OF PATENT APPLICATION

We, the undersigned (each) have agreed and hereby agree to assign to HEWLETT-PACKARD COMPANY, a Delaware corporation having its principal place of business in Palo Alto, California, its successors and assigns, the entire right, title and interest, including the right of priority, in, to and under an application for Letters Patent of the United States entitled:

Application No.:	Error Correction Coding A	and Decoding In A S	olid-State Storage Device
Letters Patent, and any and all Letters Patent of the United States and of countries foreign the which may be granted thereon or therefor; and any reissues, or reexaminations, or extensions of Letters Patent.  We additionally authorize HP to file applications in my/our name for Letters Patent in any could be held and enjoyed by HP, its successors, assigns, nominees or legal representatives, to the full of the term or terms for which said Letters Patent respectively may be granted, reissued or extensions of the term or terms for which said Letters Patent respectively may be granted, reissued or extensions from a full of the term or terms for which said Letters Patent respectively may be granted, reissued or extensions from the heave not executed and will not execute any agreement in conflict herewith, and further covenant and agree that I/we will, each time a request is made, and without undue of unvention(s) or improvement(s), said application and said Letters Patent, to HP, its successors, assigns or legal representatives, and I/we agree to communicate to HP, or to its nominees, all kn in any legal proceedings, to sign all tawful papers, to execute all discimers and division in any legal proceedings, to sign all tawful papers, to execute all discimers and division generally to do everything possible to ald HP, its successors, assigns, nominees and invention(s) or improvement(s) in any and all countries provided the expenses which may be incurred invention(s) or improvement(s) in any and all countries provided the expenses which may be incurred to their own benefit, proper patent protection for invention(s) or improvement or and assistance are paid by HP.  AND I/we hereby authorize and request the Commissioner of Patents and Trademarks of the United States and any official of any country or countries foreign to the United States whose duly it is to leave any and all Letters Patent for said invention(s) or improvement(s), including any and all Letters Patent and Letters Patent for said invention(s) or inventions	Filing date: 25 July 200	1	Application No.: 09/915,194
of the term or terms for which said Letters Patent respectively may be granted, relisued or externasfer not been made;  as fully and entirely as the same would have been held and enjoyed by me/us had this assignment, ransfer not been made;  AND I/we hereby covenant that I/we have full right to convey the entire interest herein assignent, and that I/we have not executed and will not execute any agreement in conflict herewith, and that I/we have not executed and will not execute any agreement in conflict herewith, and execute and deliver all such papers as may be necessary or desirable to perfect the title to nominees or legal representatives, and I/we agree to communicate to HP, or to its nominee, all kn invention(s) or improvement(s), said application and said Letters Patent, to HP, its successors, assigns foots respecting said invention(s) or improvement(s), said application and said Letters Patent, to ten in any legal proceedings, to sign all lawfull papers, to execute all disclaimers and division generally to do everything possible to ald HP, its successors, assigns, nominees and invention(s) or improvement(s) in any and all countries provided the expenses which may be incurred invention(s) or improvement(s) in any and all countries provided the expenses which may be incurred invention(s) or improvement(s) in any and all countries provided the expenses which may be incurred the United States and any official of any country or countries foreign to the United States whose duly it is to is sates and any official of any country or countries foreign to the United States whose duly it is to is sate to HP, as assignee of the entire right, title and Interthe United States which may be issued and granted on or as a result of the application aforesaid accordance with the terms of this assignment.  I/we further authorize and direct HP attorneys to Insert the serial number and filing date of sahall have been made known to them by the United States Patent and Trademark Office.  IN WITNESS WHEREOF, I/we hereunto set my/ou	Letters Patent and any	and all takens Data	- said application for ea
Turther covenant and agree that I/we will, each time a request is made, and without undue dinvention(s) or improvement(s), said application and said Letters Patent, to HP, its successors, assistances or legal representatives, and I/we agree to communicate to HP, or to its nominee, all kn in any legal proceedings, to sign all lawful papers, to execute all disclaimers and division continuations, C-I-P's, relissue and foreign applications, to make all rightful oaths and declarations, generally to do everything possible to aid HP, its successors, assigns, nominees and it in experimentatives to obtain and enforce, for its or their own benefit, proper patent protection for invention(s) or improvement(s) in any and all countries provided the expenses which may be incurred understanced and any official of any country or countries provided the expenses which may be incurred the united States and any official of any country or countries foreign to the United States whose duty it is to is say and all Letters Patent for said invention(s) or larghrowement(s), including any and all Letters Patent for said invention(s) or larghrowement(s), including any and all Letters Patent for said invention(s) or larghrowement(s), including any and all Letters Patent for said invention(s) or larghrowement(s), including any and all Letters Patent for said invention(s) or larghrowement(s), including any and all Letters Patent for said invention(s) or larghrowement(s), including any and all Letters Patent for said invention(s) or larghrowement(s), including any and all Letters Patent for said invention(s) or larghrowement(s), including any and all Letters Patent coordance with the terms of this assignment.  I/we further authorize and direct HP attorneys to Insert the serial number and filling date of spelication now identified by the attorney docket number and title set forth above as soon as the said have been made known to them by the United States Patent and Trademark Office.  I/we further authorize and direct HP attorneys to Insert the s	of the term or terms for	Athirds point I start P	deviand, nominees of legal representatives, to the full ex
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ventor's Typed Name: James Andrew Davis	IN WITNESS WHEREOF	, I/we hereunto set	my/our hand(s) and seal(s):
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(Use Page Two For Additional Inventor(s) Signature(s))

Page 1 of 3

When recorded please remm to

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PATENT APPLICATION ATTORNEY DOCKET NO. 10012432 -1

### ASSIGNMENT OF PATENT APPLICATION (cont.)

Inventor's Signature (Seal)			
and a differential (1991)		Date Assignment Signe	d:
Inventor's Typed Name: David H. Mc	cintyre		
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Page 2 of 3

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Intellectual Property Administration
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Fort Collins, Collings 80527-2400

PATENT APPLICATION
ATTORNEY DOCKET NO. 10012432-1

#### ASSIGNMENT OF PATENT APPLICATION (cont.)

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